RESTRICTED CIRCULATION

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AGRICULTURAL MEMORANDUM No 607

Grass conservation and humidity - D Forsdyke

In 2 previous Agricultural Memoranda, Nos 531, 574, the simplest possible criterion to determine suitable work days for grass conservation was used, viz a day counted if there was no measurable rain. It is well known that even on days with no rain, there is little or no loss of moisture content from cut grass because the humidity is too high. To assess the possible effects of high humidity limiting suitable periods for grass conservation, humidity and wind data were examined from 3 stations, Aberporth, Rhoose and Shawbury.

Computer printouts of frequency tables of the mid-day relative humidity and wind speed were obtained for the months May-September inclusive for the 15 year period 1957-1971. An empirical division of the frequency tables was made into 3 drying or wilting classes, defined below:

Poor or none: Wind speed 3 knots or less for all humidities and all humidities 90% or more for all wind speeds.

Some: Wind speed 4-8 kt and humidity 71-80%, humidity 81-90% and wind speed 9 knots or more.

Good: Humidity 70% or less and wind speed 4 knots or more, humidity 80% or less and wind speed 9 knots or more.

The percentage frequencies in each class, month by month, are tabulated for each station below:

		Good	Some	None %
Aberporth	May	50.1	28.5	21.4
	June	51.5	30.0	18.4
	July	47.7	30.4	21.9
	August	44.0	31.9	23.9
	September	50.0	30.5	19.5
Rhoose	May	58.9	26.5	14.4
	June	62.2	24.9	12.7
	July	59.3	28.0	12.6
	August	54.9	31.6	13.3
	September	49.5	34.8	15.5
Shawbury	May	72.4	15.3	12.4
	June	75.1	12.7	12.3
	July	70.8	14.2	15.2
	August	64.2	20.0	16.0
	September	58.9	23.8	17.5

While the divisions are empirical this does serve to quantify what we would expect with a transition to drier conditions in going from a coastal station, Aberporth, to an inland station in the lee of the Welsh mountains, Shawbury.

This analysis of course takes no account of any rain which may occur at other times of the day and attempts are now being made to analyse some data for both rainfall and relative humidity (in the form of saturation vapour deficit) so that the available time for various methods of conservation can be more precisely defined.

Any comments or suggestions on this paper should be referred to the author.

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